UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1997-0742

June 25, 1997

Jim Furnish
U.S. Forest Service
Siuslaw National Forest
P.O. Box 1148
Corvallis, Oregon 97339

Judy Nelson
Bureau of Land Management
Eugene District Office
P.O. Box 10226
Eugene, Oregon 97440-2226

RE: Conference Opinion for Proposed Actions in the U.S. Forest Service - Siuslaw National Forest, and Bureau of Land Management - Eugene District, that May Affect Oregon Coast Steelhead and Oregon Coast Coho Salmon

Dear Mr. Furnish and Ms. Nelson:

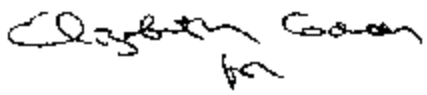
Attached is the National Marine Fisheries Service's (NMFS) Endangered Species Act (ESA) section 7 conference opinion (Opinion) for the proposed Section 318 Replacement Volume Timber Sale in the Siuslaw National Forest, and proposed No Bul Timber Sale, Gowdy's Tuckered Thin Timber Sale, Tucker Creek #2 Timber Sale, and Siuslaw River Oxbow Aquatic Habitat Restoration in the Eugene District Bureau of Land Management (BLM). These actions have been determined by the U.S. Forest Service (USFS) and BLM as "likely to adversely affect" and determined by the NMFS as not likely to jeopardize the continued existence of Oregon Coast steelhead (*Oncorhynchus mykiss*) and Oregon Coast coho salmon (*O. kisutch*). The effects determination was made by evaluating the environmental baseline (current aquatic habitat conditions) and predicting effects of actions on that baseline (see enclosed Opinion). Bulmer Creek Timber Sale (Eugene District BLM) was sold and harvested prior to issuance of this Opinion. Neil Armantrout (BLM, June 24, 1997, personal communication with Garwin Yip, NMFS) requested that Bulmer Creek Timber Sale be withdrawn from conference.

Although the NMFS expects some adverse effects to the environmental baseline from these actions, the effects are expected to be minor because of project design and project timing. Additionally, mitigation in the form of road decommissioning, down wood creation, riparian planting for future large woody debris, young managed stand treatments, and riparian and stand underplantings will beneficially affect elements of the environmental baseline.

Should Oregon Coast steelhead or Oregon Coast coho salmon become listed under the ESA, or should critical habitat be designated, the NMFS expects the attached Opinion to serve as the basis for a biological opinion on implementation of the action, pursuant to 50 CFR § 402.10(d). Since the ESA does not have a prohibition against take of proposed or candidate species, an Incidental Take Statement is not issued with the attached Opinion.

If you have any specific questions, please contact Garwin Yip at (503) 230-5419 or Steve Morris at (503) 231-2224.

Sincerely,



William Stelle, Jr.
Regional Administrator

Enclosures

Endangered Species Act - Section 7 Conference

CONFERENCE OPINION

- Section 318 Replacement Volume Timber Sale
- No Bul Timber Sale
- Gowdy’s Tuckered Thin Timber Sale
- Tucker Creek #2 Timber Sale
- Siuslaw River Oxbow Aquatic Habitat Restoration

Agencies: U.S. Forest Service, Siuslaw National Forest
Bureau of Land Management, Eugene District

Conference
Conducted By: National Marine Fisheries Service
Northwest Region

Date Issued: July 25, 1997

Refer to: OSB1997-0742

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I. Introduction and Background

The objective of this conference is to determine whether the following proposed actions are likely to jeopardize the continued existence of Oregon Coast (OC) steelhead or Oregon Coast (OC) coho salmon or result in the destruction or adverse modification of critical habitat.

U.S. Forest Service (USFS),Siuslaw National Forest (NF):
Section 318 Replacement Volume Timber Sale
Bureau of Land Management (BLM), Eugene District:
No Bul Timber Sale
Gowdy's Tuckered Thin Timber Sale
Tucker Creek #2 Timber Sale
Siuslaw River Oxbow Aquatic Habitat Restoration

Descriptions of the proposed actions are provided in Section II of this document.

The OC steelhead (*Oncorhynchus mykiss*) Evolutionarily Significant Unit (ESU)[1] was proposed as threatened under the Endangered Species Act (ESA) by the National Marine Fisheries Service (NMFS) (August 9, 1996, 61 FR 41541). The OC coho salmon ESU (*Oncorhynchus kisutch*) was proposed to be listed as threatened under the ESA by the NMFS (July 25, 1995, 60 FR 38011). Subsequent consideration of Federal and state conservation measures have resulted in a determination that a threatened listing of the ESU is not now warranted (May 6, 1997,62 FR 24588). The OC coho salmon are currently considered to be candidates for ESA listing. This determination is subject to review in three years.

Conferencing with the NMFS on projects affecting OC coho salmon is one of the Federal conservation measures upon which the NMFS based its decision not to list this ESU as

1. For purposes of conservation under the Endangered Species Act, an Evolutionarily Significant Unit is a distinct population segment that is substantially reproductively isolated from other conspecific population units and represents an important component in the evolutionary legacy of the species (Waples 1991).

threatened. Thus, for the purpose of this conference, the NMFS has provided an effects analysis and has recommended measures to avoid or minimize adverse effects as if the ESU was listed as threatened.

The proposed actions have been determined as "likely to adversely affect" OC steelhead and OC coho salmon. The NMFS expects these actions to adversely affect the environmental baseline. However, project design, timing, and expected mitigation reduce these effects substantially enough to avoid jeopardizing the continued existence of OC steelhead or OC coho salmon. Because critical habitat has not been proposed or designated, this conference does not address destruction or adverse modification of critical habitat. Should OC steelhead or OC coho salmon be listed under the ESA, or should critical habitat be designated, the NMFS expects this Conference Opinion (Opinion) to serve as the basis for a biological opinion on implementation of this action, pursuant to 50 CFR § 402.10(d).

On February 26, 1997, the NMFS received a letter and biological assessment (BA) from the U.S. Forest Service (USFS), Siuslaw NF, requesting conference regarding the potential effects of Section 318 Replacement Volume Timber Sale on OC steelhead and OC coho salmon (USDA-FS 1997). On March 24, 1997, the NMFS received a letter and BA from the BLM, Eugene District, requesting conference regarding the potential effects of No Bul Timber Sale, Bulmer Creek Timber Sale, Gowdy’s Tuckered Thin Timber Sale, Tucker Creek #2 Timber Sale, and Siuslaw River Oxbow Aquatic Habitat Restoration, on OC steelhead and OC coho salmon (USDI-BLM 1997a). Addenda to this BA were received on March 27 and April 14, 1997 (USDI-BLM 1997b and 1997c, respectively). Neil Armantrout (BLM, June 24, 1997, personal communication with Garwin Yip, NMFS) requested that Bulmer Creek Timber Sale be withdrawn from conference.

This Opinion has been completed pursuant to the ESA and its implementing regulations (50 CFR § 402), and constitutes formal conference for OC steelhead and OC coho salmon, proposed and candidate for listing, respectively, under the ESA. Formal conferencing on these proposed actions is concluded with the issuance of this Opinion.

The NMFS, in collaboration with other Federal agencies[2], has prepared guidance for determining the effects of human activities on anadromous fish species of concern (NMFS 1996). This guidance is based on a "Matrix of Pathways and Indicators" (Matrix), which is a simple yet holistic method of characterizing environmental baseline conditions and predicting the effects of human activities on those baseline conditions. The Matrix provides generalized ranges of functional values (i.e., properly functioning, at risk, and not properly functioning) for aquatic, riparian, and watershed parameters.

The NMFS acknowledges that the generalized values provided in the Matrix may not be appropriate for all watersheds within the range of anadromous salmonids. Development of more biologically appropriate matrices in specific physiographic areas is encouraged. The NMFS, in conjunction with the Oregon Department of Fish and Wildlife (ODFW) and Federal land management agencies, is in the process of appropriately modifying the Matrix for the Oregon Coast Range Province (this includes the proposed project area). For the purpose of this conference, the existing Oregon Coast Range Province interim Matrix (dated June 14, 1996) was used to analyze the proposed actions. This interim Matrix is included in Attachment 1 of this Opinion.

II. Proposed Actions

1. Section 318 Replacement Volume Timber Sale: The USFS proposes to provide alternative timber volume for the Randall Salado and Green Apple timber sales, under Section 2001 (k)(3) of the Rescission Act (Public Law 104-19) and the September 17, 1996, settlement agreement in Northwest Forest Resource Council v. Glickman and Babbitt.

   The alternative timber volume is a commercial thin of approximately 11.3 million board feet of timber from 410 acres of conifer in the Upper Three Rivers sub-watershed (Wilson/Trask Section 7 Watershed), 15 acres in the Drift Creek key watershed (Alsea Section 7

2. The other collaborating Federal agencies are the U. S. Forest Service, the Bureau of Land Management, and the U. S. Fish and Wildlife Service.

Watershed), and 85 acres in the Big Elk Creek watershed (Siletz/Yaquina Section 7 Watershed). Thinning prescriptions would reduce stand densities to between 60 and 100 trees per acre.

In addition, the USFS proposes to:

- Stabilize and close approximately 7.7 miles of roads in the Wilson/Trask Section 7 Watershed, and 9.2 miles of roads in the Siletz/Yaquina and Alsea Section 7 Watersheds;

- Designate three to five trees per acre to provide down woody material in thinned units, and create down wood in 18 additional acres where down wood is deficient;

- Pre-commercially thin an additional 455 acres of young conifer stands in the Three Rivers sub-watershed and 500 acres in the Grant, Lower Big Elk and Homestead sub-watersheds;

- Selectively fell approximately four acres of red alder and plant conifers in the Three Rivers sub-watershed as a source of future woody debris for the stream; and

- Within the 60 trees per acre thinning prescription, plant trees in areas ranging from 10 to 40 acres.

2. No Bul Timber Sale: The BLM proposes an 89-acre regeneration harvest in the Wildcat Creek subwatershed (Siuslaw Section 7 Watershed). One-tree length (210 feet) no-cut buffers would be maintained on each side of non-fish- bearing tributaries, and two-tree length (420 feet)
no-cut buffers would be maintained on each side of fish-bearing tributaries. Five-hundred fifty feet of new road would be constructed and 1,100 feet of existing road would be renovated by removing vegetation and providing drainage.

3. Gowdy's Tuckered Thin Timber Sale: The BLM proposes a 126-acre density management thin with variable prescriptions in tributaries of South Fork Siuslaw River (Siuslaw Section 7 Watershed). One-end suspension cable yarding would be used. One-tree length (210 feet) no-cut buffers would be maintained on each side of non-fish-bearing tributaries, and two-tree length (420 feet) no-cut buffers would be maintained on each side of fish-bearing tributaries. One and three-tenths miles of road would be constructed and 2.25 miles would be renovated for the timber harvest.

4. Tucker Creek #2 Timber Sale: The BLM proposes a 50-acre regeneration harvest in the Tucker Creek subwatershed of South Fork Siuslaw River (Siuslaw Section 7 Watershed). One-end suspension cable yarding would be used. Fish-bearing streams would have 400-foot no-cut buffers on each side, and non-fish-bearing streams would have 200-foot no-cut buffers on each side. Two yarding corridors will enter two non-fish-bearing stream buffers. A total of 4690 feet of road would be built or upgraded for the timber harvest.

5. Siuslaw River Oxbow Aquatic Habitat Restoration: The BLM proposes to place a series of log and boulder structures in the Siuslaw River (Siuslaw Section 7 Watershed) to restore aquatic habitat. Temporary access would be provided from a paved road. The project is intended to increase the depth of water and channel deposits, and increase channel complexity in order to reduce water temperatures, increase retention of sediments, increase spawning and rearing habitat, and increase the future source of large woody debris.

The USFS and BLM have incorporated several project design features in the proposed actions that substantially reduce adverse effects to anadromous fish. These features include:

1. Section 318 Replacement Volume Timber Sale:
   - Obliterating unmaintained forest roads and road spurs.
   - Creating large woody debris, thinning to accelerate tree growth for future large woody debris and late successional reserve characteristics, and planting to provide future large woody debris.

2. No Bul Timber Sale:
   - One-tree length (210 feet) no-cut buffers on first and second order tributaries, and two-tree length (420 feet) no-cut buffers on third order tributaries.
   - Renovating roads to provide proper drainage prior to timber harvest.
   - Subsoiling and revegetating renovated and constructed roads upon completion of the timber harvest.

3. Gowdy's Tuckered Thin Timber Sale:
   - One-tree length (210 feet) no-cut buffers on first and second order tributaries, and two-tree length (420 feet) no-cut buffers on third order tributaries. There are no third order tributaries within the harvest units.
   - Renovating roads to provide proper drainage prior to timber harvest.
   - Subsoiling and revegetating renovated and constructed roads upon completion of the timber harvest.

4. Tucker Creek #2 Timber Sale:
   - 200-foot no-cut buffers on non-fish-bearing streams and 400-foot no-cut buffers on fish-bearing streams.
   - Subsoiling and revegetating upgraded and constructed roads upon completion of the timber harvest.

5. Siuslaw River Oxbow Aquatic Habitat Restoration:
   - Subsoiling and planting the temporary access road upon completion of the project.
   - Compliance with the ODFW preferred in-water work window.
   - Planting additional conifers in the riparian area to provide a future source of large woody debris.

Full project details are available in USDA-FS (1997), USDI-BLM (1997a, 1997b, and 1997c).

III. Biological Information and Critical Habitat

The listing status and biological information for both OC steelhead and OC coho salmon are described in Attachment 1. While critical habitat has not been proposed or designated, Attachment 1 describes potential critical habitat elements for OC steelhead and OC coho salmon.

IV. Evaluating the Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA, and defined in the implementing regulations (50 CFR § 402). Attachment 2 describes how the NMFS applies the ESA jeopardy standards. Neither OC steelhead nor OC coho salmon are currently listed and therefore there is no designated critical habitat. If critical habitat is proposed or designated, consultation would be reinitiated to determine if there will be destruction or adverse modification of critical habitat.

As described in Attachment 2, the first steps in applying the ESA jeopardy standards are to define the species' biological requirements and to describe the species' current status as reflected by the environmental baseline. In the next steps, the NMFS' jeopardy analysis considers how proposed actions are expected to directly and indirectly affect specific environmental factors that define properly functioning aquatic habitat essential for the survival and recovery of the species. This analysis is set within the dual context of the species' biological requirements and the existing conditions under the environmental baseline (defined in Attachment 1). The analysis takes into consideration the offsetting effects of beneficial and detrimental activities taking place within the action area. If the NMFS finds that the Federal actions are likely to jeopardize the listed species then the NMFS must identify any reasonable and prudent alternatives to the proposed action.

A. Biological Requirements. For this conference, the NMFS finds that the biological requirements of OC steelhead and OC coho salmon are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of the species. Individual environmental factors include water quality, habitat access, physical habitat elements, channel condition, and hydrology.

Properly functioning watersheds, in which all of the individual factors operate together to provide healthy aquatic ecosystems, are also necessary for the survival and recovery of OC steelhead and OC coho salmon. This information is summarized in Attachment 1.

B. Environmental Baseline.

1. **Current range-wide status of the species under the environmental baseline.** The OC steelhead ESU is not presently in danger of extinction. The NMFS is now considering whether it is likely to become endangered in the foreseeable future (Busby *et al*. 1996). The OC coho salmon ESU may be at risk of extinction in the foreseeable future if present conditions continue (and that proposed harvest and hatchery reforms are not implemented (NMFS 1997, Weitkamp *et al*. 1995). In the absence of adequate population data, habitat condition provides a means of evaluating the status of these species for the environmental baseline assessment.

2. **Action Area**. The “action area” is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR § 402.02). Thus, the "action area" for this conference includes areas downstream of the project area as well as the immediate project area itself.

3. **Current status of the species under the environmental baseline within the action area.** Environmental baseline conditions within the action area were evaluated at the site and basin scale. This evaluation was based on the Oregon Coast Province Interim Matrix (see Attachment 1). This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species.

   The Wilson/Trask, Siletz/Yaquina, and Alsea Section 7 Watersheds are “at risk” or “not properly functioning” for the majority of the environmental

conditions considered. Environmental conditions varied between all three functional levels, with the "not properly functioning" category dominant in all three Section 7 Watersheds (USDA-FS 1997).

The Siuslaw Section 7 Watershed is "not properly functioning" for the majority of the aquatic, riparian, and watershed parameters presented in the matrix(USDI-BLM 1997a, 1997b, and 1997c).

Based on the best information available on the current status of the species (Attachment 1) and the NMFS' assumptions given the information available regarding (1) population status, population trends, and genetics (page 3 of Attachment 2) and (2) the environmental baseline conditions within the action areas, the NMFS concludes that the biological requirements of OC steelhead and OC coho salmon are currently not being met under the environmental baseline within the action areas. Significant improvement in habitat conditions is needed to meet the biological requirements for survival and recovery of these species. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of OC steelhead and OC coho salmon due to the high level of risk the species presently face under the degraded environmental baseline.

V. Analysis of Effects

A. Effects of Proposed Actions. The effect determination for the proposed projects were made using NMFS (1996) to evaluate the environmental baseline (current aquatic conditions) and to predict any effects of the actions on that baseline. The effects of the actions are expressed in terms of the expected effect (restore, maintain, or degrade) on each of the aquatic habitat factors in the project areas, as described in the "Checklist for documenting environmental baseline and effects of the action" (Checklist) completed for each action (USDA-FS 1997, USDI-BLM 1997a, 1997b, and 1997c). The results of the Checklists for these actions provide a basis for determining the overall effects on the environmental baseline in the project areas.

Some short-term degradation in sediment, road density, disturbance history, and riparian reserves may occur as a result of implementing the proposed projects. In the long term, the proposed actions are expected to maintain all habitat indicators in the Wilson/Trask, Alsea, and Siletz/Yaquina Section 7 Watersheds (USDA-FS 1997). The Siuslaw River Oxbow Aquatic Habitat Restoration project is designed to move many habitat indicators towards restoration (USDI-BLM 1997a and 1997c).

Potential adverse effects of the projects and mitigating factors are discussed below.

1. Section 318 Replacement Volume Timber Sale
   - Road spurs will be constructed for the timber sale, slightly increasing road density. However, in addition to other roads, they will be obliterated upon completion of the timber sale, reducing road density in the affected watersheds.

   - Timber hauling may increase turbidity, but adverse affects are minimized by restricting hauling to dry conditions and improving roads before hauling.

   - Timber harvest reduces the amount of large woody debris in the short term. However, thinning the riparian area would result in accelerated growth of existing trees that will provide future large woody debris.

2. No Bul Timber Sale
   - Road construction and use may result in short-term increases in sediment, and also increase the road density in the watershed. However, the 500 feet of new road and 1,100 feet of renovated road would be subsoiled and revegetated upon completion of the timber harvest, reducing the long term input of sediment, in addition to reducing road density.

   - Riparian reserves may be affected by three logging corridors. However, these corridors would cross non-perennial riparian reserves, and are away from fish-bearing streams.

3. Gowdy's Tuckered Thin Timber Sale
   - Road construction and use may result in short-term increases in sediment, and also increase the road density in the watershed. However, the 1.3 miles of new road and 2.25 miles of renovated road would be subsoiled and revegetated upon completion of the timber harvest, reducing the long term input of sediment, in addition to reducing road density.

4. Tucker Creek #2 Timber Sale
   - Road use, logging, and road building may result in short-term increases in sediment. Riparian buffers would reduce potential sedimentation.

   - Road construction may also increase sediment, and would increase the road density in the watershed. However, all upgraded and constructed roads would be subsoiled and revegetated upon completion of the timber harvest.

5. Siuslaw River Oxbow Aquatic Habitat Restoration
   - Short-term sediment input may increase as a result of in-water work and use of the temporary access road. However, use of the ODFW preferred in-water work window, and subsoiling and planting the access road upon completion of the project, would minimize and mitigate potential adverse affects.

   - There would be a minor short term increase in road density as a result of the temporary access road. However, upon completion of the project, the access road would be subsoiled and planted, resulting in no net increase in road density.

   - The project would be implemented within the riparian area. However, decommissioning of the temporary access road, and additional conifer plantings would minimize and mitigate potential adverse effects.

B. Cumulative Effects. "Cumulative effects" are defined as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 CFR § 402.02).

Significant improvement in the reproductive success of OC steelhead or OC coho salmon is unlikely without changes in agricultural, forestry, and other practices affecting riparian areas. The NMFS is not aware of any future changes to existing State and private activities within the action area that would cause greater impacts to these species than presently occurs.

VI. Conclusion

The Section 318 Replacement Volume Timber Sale, as described in the USFS BA (USDA-FS 1997), and No Bul Timber Sale, Gowdy's Tuckered Thin Timber Sale, Tucker Creek #2 Timber Sale, and Siuslaw River Oxbow Aquatic Habitat Restoration, as described in the BLM BA and addenda (USDA-BLM 1997a, 1997b, and 1997c), are not likely to jeopardize the continued existence of OC steelhead and OC coho salmon. The NMFS used the best available scientific and commercial data to apply its jeopardy analysis (Attachment 2) when analyzing the effects, including cumulative effects, of the proposed actions on the biological requirements of the species relative to the environmental baseline.

In reaching this conclusion, the NMFS has determined that the likelihood of survival and recovery of OC steelhead and OC coho salmon can be increased by providing sufficient prespawning survival, egg-to-smolt survival, and upstream/downstream migration survival rates through the protection of and restoration to properly functioning freshwater habitat within the Wilson/Trask, Alsea, Siletz/Yaquina, and Siuslaw Section 7 Watersheds.

The USFS and BLM applied the NMFS' evaluation methodology (NMFS 1996) to the proposed actions and found that the proposed actions would maintain the most of the essential habitat elements, with minor, short-term degradation of some essential habitat elements, like sediment, road density, and riparian areas. The actions would move other habitat indicators, like road density, towards restoration. Project

design features, such as road decommissioning and no-cut riparian buffers substantially diminish short-term adverse effects to anadromous salmonids.

Because they are balanced by habitat improvements, adverse habitat effects from the proposed actions would not reduce prespawning survival, egg-to-smolt survival, or upstream/downstream migration survival rates to a level that would appreciably diminish the likelihood of survival and recovery of OC steelhead and OC coho salmon.

VII. Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The NMFS does not have any conservation recommendations to further minimize or avoid adverse effects of the proposed actions on OC steelhead and OC coho salmon.

VIII. Reinitiation of Conference

Reinitiation of this conference is required: (1) if any action is modified in a way that causes an effect on the species that was not previously considered in the BA and in this Opinion; (2) new information or project monitoring reveals effects of the action that may affect the species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR § 402.16).

For example, the analysis included in this conference has been conducted at the project or site level. Future watershed or basin analyses may indicate that the existing environmental baseline is substantially different than indicated by this analysis. Reinitiation of this conference would be required for ongoing or continuing activities for which the environmental baseline is substantially different than originally assessed.

IX. References

Section 7(a)(2) of the ESA requires biological and conference opinions to be based on "the best scientific and commercial data available." This section identifies the information used in developing this Opinion in addition to the BAs provided by the USFS and BLM.

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-27. 261 pages.

National Marine Fisheries Service. 1996. Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale. NMFS, Environmental and Technical Services Division, Habitat Conservation Branch, 525 NE Oregon Street, Portland, Oregon. 28 pages.

National Marine Fisheries Service (NMFS). 1997. April 3, 1997, memorandum, from Michael Schiewe (NMFS), to William Stelle (NMFS) and William Hogarth (NMFS), and attached March 28, 1997, document, “Status review update for coho salmon from the Oregon and Northern California coasts.”

United States Department of Agriculture - Forest Service (USDA-FS). 1997. Biological assessment for the Section 318 Replacement Volume Timber Sale. Siuslaw National Forest. February 24, 1997.

United States Department of Interior - Bureau of Land Management (USDI-BLM). 1997a. March 20, 1997, letter and biological assessments, from Lee Lauritzen (BLM), to Garwin Yip and Joanne Wu (NMFS), for No Bul Timber Sale, Bulmer Creek Timber Sale, Gowdy’s Tuckered Thin Timber Sale, Tucker Creek #2 Timber Sale, and Siuslaw River Oxbow Aquatic Habitat Restoration, that may affect the coho salmon and steelhead trout in the Siuslaw River Basin. Eugene District.

United States Department of Interior - Bureau of Land Management (USDI-BLM). 1997b. Addendum to biological assessments submitted with the March 20, 1997, letter. Eugene District. March 17, 1997.

United States Department of Interior - Bureau of Land Management (USDI-BLM). 1997c. Addendum to biological assessments submitted with the March 20, 1997, letter. Eugene District. April 10, 1997.

Waples, R.S. 1991. Definition of “species” under the endangered Species Act: application to Pacific salmon. NOAA Technical Memorandum NMFS F/NWC-194, Northwest Fisheries Center, Seattle, Washington. 29 pages.

Weitkamp, L.A., T.C. Wainwright, G.J. Bryant, G.B. Milner, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status review of coho salmon from Washington, Oregon and California. NOAA Technical Memorandum NMFS-NWFSC-24, Northwest Fisheries Science Center, Seattle, Washington. 258 pages.